IT Innovation for Change in Healthcare

The innovative application of information technologies (IT) in the consumer, clinical, and public health spheres offers the potential for transformational improvements to the healthcare system. Addressing the significant challenge of developing, evaluating, and integrating such innovations requires a systems approach that encompasses the technical and social dimensions, as well as interrelationships across the personal, clinical and public health levels. Vital to the innovative process are electronic information platforms, or cyberinfrastructure, that use grid and cloud-based systems for storage, harmonization, access, analysis, and utilization of data.

IT innovation in healthcare includes infrastructures to support large data sets/sources as well as emerging data platforms such as the National Health Information Network (NwHIN), Public Health Information Network (PHIN), Cancer Research Network (CRN), and HealthData.gov. IT innovations are also important in health prevention and promotion. health surveillance data, such as the Health Information National Trends Survey (HINTS), are helpful for assessing population trends and informing health-related policy and practice. Such policy and practice applications can be accelerated through applied research, demonstrations, and open innovation developer challenges. Recent developer challenges have provided a key mechanism for applying disparate data sets to advance health promotion and disease prevention, improve health communication and coordination, and expand the use of applications targeting specific populations and health outcomes.

This conference mini-track highlights some of the IT innovations in healthcare for population health and health services. It will feature the following papers:

- A Hybrid Case Based Recommender in mHealth for Smoking Cessation
- Lessons from an Online Stop-Smoking Intervention: Adaptations for Mobile Implementation
- Stage-Based mHealth Communication Interventions for HPV Education

These research papers address technical, behavioral, social and health issues, with topics ranging from high performance computing topics concerning the extraction of knowledge from various data collections, data acquisition and analysis in a data intensive health science world, and open technological advancements. A particular emphasis in several of the papers relates to the use of large data sets, mhealth, and cyberinfrastructure to prevent, monitor, and manage cancer.